

## Exhibit A SCOPE OF WORK

### TECHNICAL TASK LIST

Task #	CPR	Task Name
1	N/A	ADMINISTRATION
1.1		Kick-Off, Critical Project Review (CPR), and Final Meetings
1.2		Monthly Progress Reports and Invoices
1.3		Subcontractor Management
1.4		Final Report
1.4.1		Final Report Outline
1.4.2		Final Report
1.4.3		Test Plans, Technical Reports and Interim Deliverables
1.5		Identify and Obtain Leverage Funds
1.6		Identify and Obtain Required Permits
1.7		Electronic File Format
1.8		Submission of Waste Management Plan Framework and Waste Management Plans
1.9		Historic Preservation Consultation
2		PROGRAM DELIVERY / TECHNICAL TASKS
2M		Program Delivery-MULTI-FAMILY PROGRAM
2.1M		Program Implementation Plan (PIP)
2.2M		Tracking System
2.3M		Marketing Materials
2.4M		Marketing, Education and Outreach: Participant Recruitment
2.5M		Audit and Verification Protocols for Multi-family (MF) Buildings
2.6M		HERS Rater and Analyst, and Building Performance Contractor Training on Audit, Simulation, and Verification Protocols for Multi-family
2.7M		HERS II Software Extension to Develop a Multi-family Building Simulation Tool
2.8M		Multi-Family Plan Check and Design Assistance
2.9M		Quality Assurance
2.10M		Conformance with California Law
2.11M		Collaboration with State and National Programs
2.12M		Workforce Development
2.13M		Navigational Tool
2.14M		Energy Management Guidelines
2.15M		Tenant Energy Conservation Education
2.16M		Building Owner Incentives
2.17M		HERS Rater, Inspector, and Analyst Incentives
2.18M		Verification of Energy Savings

Task #	CPR	Task Name
2S		Program Delivery-SINGLE FAMILY PROGRAM
2.1S		Program Implementation Plan (PIP)
2.2S		Tracking System
2.3S		Marketing, Education and Outreach: Participant Recruitment
2.4S		Quality Assurance
2.5S		Conformance with California Law
2.6S		Collaboration with State and National Programs
2.7S		Workforce Development
2.8S		Navigational Tool
2.9S		Building Owner Incentives
2.10S		PACE Financing Programs
2.11S		HERS Rater and Home Performance Contractor Incentives
2.12S		Verification of Energy Savings

## KEY NAME LIST

### County of San Diego:

Anna Lowe, Land Use I Environmental Planner  
Renee Loewer, Administrative Analyst III  
Devon Muto, Chief, Land Use  
Amy Carroll, Land Use Technician III  
Kimberly Martin, Civil Engineer

### California Center for Sustainable Energy:

Andrew McAllister, Director of Programs  
Siobhan Foley, Director of Education and Outreach  
Ashley Watkins, Manager of Education and Training Programs  
Kim Sykes, Marketing Manager  
Terry Clapham, Distributed Generation Manager  
Tim Treadwell, Senior Program Analyst  
Jeremy Hutman, Program Manager  
Jack Clark, Senior Program Manager  
Jesse Fulton, Program Manager

### Heschong Mahone Group, Inc.:

Julieann Summerford, Associate Director  
Elizabeth McCollum, Project Manager  
Jeff Staller, Project Manager  
Sophia Hartkopf, Associate Manager  
Abhijeet Pande, Associate Director  
Amy Barr, Senior Project Manager

### CalCERTS:

Toni Turnbull, Senior Consultant

Michael Bachand, Principal  
Russ King, Sr. Director

Strategic Energy Innovations:

Cyane Dandridge, Director  
Jeffrey Summerville, Manager

ManPower:

Trevor Blair, Job Developer  
Heather Whitley, Program Manager

EnergySoft:

Martyn Dodd, Principal  
Demian Vonder Kuhlen, Senior Associate

Brummit Energy Associates:

Beth Brummitt, Principal  
Charles Christenson, Senior Project Manager

<b>Task #</b>	<b>Key Personnel</b>	<b>Subcontractor(s)</b>	<b>Key Partner(s)</b>
1.1	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.2	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.3	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.4	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.4.1	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.4.2	Anna Lowe	Andrew McAllister	

<b>Task #</b>	<b>Key Personnel</b>	<b>Subcontractor(s)</b>	<b>Key Partner(s)</b>
	Renee Loewer	Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.4.3	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.5	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford	
1.6	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
1.7	Anna Lowe Renee Loewer	Andrew McAllister Siobhan Foley Ashley Watkins Julieann Summerford Jack Clark	
2M		Julieann Summerford, Elizabeth McCollum, Sophia Hartkopf	
2.1M		Julieann Summerford Elizabeth McCollum Sophia Hartkopf	
2.2M		Julieann Summerford Elizabeth McCollum Sophia Hartkopf	
2.3M		Julieann Summerford Elizabeth McCollum Amy Barr Sophia Hartkopf	
2.4M		Julieann Summerford Elizabeth McCollum Amy Barr Sophia Hartkopf	
2.5M		Julieann Summerford Elizabeth McCollum Amy Barr Sophia Hartkopf	
2.6M		Jeff Staller	

<b>Task #</b>	<b>Key Personnel</b>	<b>Subcontractor(s)</b>	<b>Key Partner(s)</b>
		Elizabeth McCollum Mike Bachand Russ King	
2.7M		Jeff Staller Elizabeth McCollum Martyn Dodd Demian Vonder Kuhlen Mike Bachand Russ King	
2.8M		Jeff Staller Elizabeth McCollum	
2.9M		Jeff Staller Elizabeth McCollum	
2.10M		Jeff Staller Elizabeth McCollum	
2.11M		Julieann Summerford Elizabeth McCollum Amy Barr Sophia Hartkopf	
2.12M		Julieann Summerford Mike Bachand Toni Turnbull	
2.13M		Julieann Summerford Elizabeth McCollum Abhijeet Pande Beth Brummitt Charles Christenson	
2.14M		Julieann Summerford Elizabeth McCollum Jeff Staller	
2.15M		Julieann Summerford Elizabeth McCollum Jeff Staller	
2.16M		Julieann Summerford Cyane Dandrige Jeffrey Summerville	
2.17M		Julieann Summerford Elizabeth McCollum Amy Barr Sophia Hartkopf	
2.18M		Julieann Summerford Elizabeth McCollum Amy Barr Sophia Hartkopf	

<b>Task #</b>	<b>Key Personnel</b>	<b>Subcontractor(s)</b>	<b>Key Partner(s)</b>
2S		Andrew McAllister Siobhan Foley Ashley Watkins Jack Clark	
2.1S		Andrew McAllister Siobhan Foley Ashley Watkins Jack Clark	
2.2S		Andrew McAllister Siobhan Foley Ashley Watkins Jack Clark	
2.3S		Siobhan Foley Kim Sykes Jack Clark Jesse Fulton	SDG&E Local Governments
2.4S		Andrew McAllister Terry Clapham Jeremy Hutman Jack Clark Jesse Fulton	
2.5S		Andrew McAllister Terry Clapham Jack Clark	
2.6S		Andrew McAllister Terry Clapham Jack Clark Jesse Fulton	
2.7S		CBPCA Ashley Watkins Siobhan Foley Trevor Blair Heather Whitley Jack Clark Jesse Fulton	CalCERTS CHEERS SDG&E SD Workforce Partnership Green Coalition Community College District
2.8S		Andrew McAllister Siobhan Foley Jack Clark	
2.9S		Andrew McAllister Siobhan Foley Ashley Watkins Jack Clark Jesse Fulton	SDG&E Local Governments
2.10S		Andrew McAllister Jeremy Hutman	Local Governments

Task #	Key Personnel	Subcontractor(s)	Key Partner(s)
		Jack Clark	
2.11S		Andrew McAllister Ashley Watkins Jack Clark	
2.12S		Andrew McAllister Timothy Treadwell Jeremy Hutman Jack Clark Jesse Fulton	SDG&E

## DEFINITIONS

The following definitions apply throughout this Agreement:

1. **“Contractor”** means the entity that receives funding directly from the Energy Commission under this Agreement. The Contractor is defined as a “subrecipient” under Federal law (see Office of Management and Budget (OMB) Circular A-133, Subpart A, Section .105 and Subpart B, Section .210).
2. **“Subaward”** means an award made by the Contractor to a subawardee or a vendor.
3. **“Subawardee”** means any entity other than a vendor that receives funding from the Contractor to carry out or support any portion of this Agreement.
4. **“Subcontractor”** means a subawardee or vendor.
5. **“Vendor”** means any entity defined as such by OMB Circular A-133 (see Subpart A, Section .105 and Subpart B, Section .210).

## TERMS AND ACRONYMS

*Specific terms and acronyms used throughout this work statement are defined as follows:*

Acronym	Definition
ARRA	American Recovery and Reinvestment Act
BPI	Building Performance Institute
Btu	British Thermal Units
CalCERTS	CalCERTS, Inc.
CALSPREE	California Statewide Program for Residential Energy Efficiency
CBPCA	California Building Performance Contractors Association
CCM	Commission Contract Manager
CCSE	California Center for Sustainable Energy
CDLAC	California Debt Limit Allocation Committee

<b>Acronym</b>	<b>Definition</b>
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CHEERS	California Home Energy Efficiency Rating Services
Collaborative	Contractor group consisting of County of San Diego, CCSE, HMG and CBPCA and a consortium of local governments, workforce development organizations, community colleges, community groups and SDG&E's Home Performance with Energy Star whole-house retrofit incentives program
CPR	Critical Project Review
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
EECBG	Energy Efficiency Conservation Block Grant
EM&V	Evaluation, Measurement and Verification
HERCC	California Home Energy Retrofit Coordinating Committee
HERS II	Home Energy Rating System, Phase II
HMG	Heschong Mahone Group, Inc.
HPwES	Home Performance with Energy Star
HTM	Hers Technical Manual
HUD	U.S. Department of Housing and Urban Development
kBtu	1,000 British Thermal Units
kW	Kilowatt
kWh	Kilowatt-hour
LISC	Local Initiatives Support Corporation
MF	Multifamily
MOU	Memorandum of Understanding
PACE	Property Assessed Clean Energy (first-priority lien financing programs)
PIP	Program Implementation Plan
PV	Photovoltaics
SFP	Single Family Program under this contract
SANDAG	San Diego Association of Governments
SBSI	Sierra Building Science, Inc.
SDG&E	San Diego Gas & Electric Company
SEI	Strategic Energy Innovations
SEP	State Energy Program
TCAC	California Tax Credit Allocation Committee
TDV	Time Dependent Valuation

## **I. Problem Statement**

As the third largest metropolitan area in California, the San Diego region plays a crucial role in the state's efforts to achieve its goal of 40% average energy savings in existing residences by 2020. Thus, the County of San Diego is partnering with the California Center for Sustainable Energy (CCSE), Heschong Mahone Group, Inc.



(HMG), California Building Performance Contractors Association (CBPCA), and a consortium of local governments, workforce development organizations, community colleges, community groups and SDG&E's Home Performance with Energy Star whole-house retrofit incentives program, hereafter known as "the collaborative," to design and implement a Comprehensive Residential Building Retrofit Program for the San Diego region. The Energy Commission has received funding for the EECBG Program under ARRA to advance these goals and to stimulate the economy. A critical strategy of the Energy Commission is to ensure that at the regional level, local communities have the capacity, expertise and leadership to implement current and anticipated energy efficiency retrofit programs, including Property Assessed Clean Energy (PACE) financing authorized in California under AB 811 and HOME STAR Energy Retrofit Act of 2010 as proposed by Congress. Because the viability of PACE programs is in question at the time of the execution of this Agreement, the Energy Commission is further seeking to ensure that local and regional programs include alternative financing options in addition to PACE.

This program will work collaboratively with efforts in the San Diego region to launch municipal financing (PACE) programs, as well as with other sources of financing, such as the Neighborhood Stabilization Program and Energy Efficient Mortgage and FHA 203K loan programs, aimed at low and moderate income homeowners. The Comprehensive Residential Building Retrofit Program will be working to advance California's Home Energy Rating System (HERS II) Program in the San Diego region to achieve home energy audits, whole-house ratings, field verification and quality assurance, including extension of HERS II to multi-family buildings and inclusion of HERS II ratings in local multiple listing services (MLS).

The County of San Diego (County, or Contractor) will administer the Comprehensive Residential Building Retrofit Program and will be responsible for fiscal oversight, reporting and invoicing to the Energy Commission. The program includes two separate yet equally important target markets: multi-family and single-family. The County will subcontract to CCSE who will be responsible for administration of the single-family program and to HMG, who will be responsible for the administration of multi-family program.

## **II. Goals and Objectives of the Agreement**

The principal goal of this Agreement is to cultivate a sustainable market for energy efficiency retrofits that reduces regional energy consumption and creates jobs that stimulate our struggling economy. With a focus on both market-rate and affordable housing, the program will actively engage single-family homeowners and multi-family building owners in the region's efforts to reduce energy use, carbon emissions and water use in support of AB 32, California's Energy Action Plan and local Climate Action Plans. Active training and support of building performance contractors coupled with workforce development efforts to train and place training graduates will generate hundreds of new career-track jobs in construction and green industries. In

addition, this program will develop tools and best practices that can be applied to future residential retrofit programs and energy-efficiency strategies. The collaborative will work together to ensure this market will be sustainable long after American Recovery and Reinvestment Act (ARRA) funding has ceased.

The funding provided by the Energy Commission under this Agreement will support activities associated with increasing the capacity, expertise and readiness of the County and the collaborative to accomplish comprehensive residential retrofits, including but not limited to: 1) targeted information to recruit residential building owners to participate; 2) training and support for the workforce needed to provide whole-house/whole-building retrofits; 3) access to and facilitation of retrofit financing through municipal financing programs utilizing PACE and other financing mechanisms, and/or other FHA and HUD financing and other utility or local incentives; and 4) support and engagement of the local infrastructure of building performance contractors and home energy raters to provide energy audits, ratings and quality assurance of retrofits. Actual retrofit activities are not funded under this Agreement, but shall be funded through match funding or other resources.

### **III. Funding**

This Agreement is being funded by the California Energy Commission (Energy Commission), under the American Recovery and Reinvestment Act of 2009 (ARRA) by the U.S. Department of Energy (DOE) through the Energy Efficiency and Conservation Block Grant (EECBG), number DE-EE0000905. It is hereby understood and agreed that this Agreement shall be governed by the laws of the State of California (State) as to interpretation and performance.

This Intergovernmental Contract (Agreement) will provide \$3 million of Energy Commission EECBG funds, which along with leveraged funds that will be provided by program partners, will enable the County of San Diego to conduct the comprehensive residential building retrofit program as a regional priority.

All work and/or the expenditure of funds (Commission-reimbursed and/or match share) must occur within the approved term of this Agreement. The Commission cannot authorize any payments until all parties sign this Agreement.

## TASK 1 ADMINISTRATION

The terms “contractor” and “collaborative” are used interchangeably throughout this document.

### MEETINGS

#### **Subtask 1.1 Kick-off, Critical Project Review (CPR), and Final Meetings**

The goal of the kick-off Meeting is to establish the lines of communication and procedures for implementing this Agreement. The administrative and technical aspects of this Agreement will be discussed at the meeting. The administrative portion of the meeting shall include, but not be limited to, the following:

- Terms and conditions of the Agreement Critical Project Reviews (CPRs)
- Leverage fund documentation (subtask 1.5)
- Permit documentation (subtask 1.6)
- Training on ARRA reporting requirements (subtask 1.2 and Exhibit E)
- Historic Preservation and Consultation Requirements
- Waste Management Plan Requirements
- Use of State Identity Branding Mark Logo (see Exhibit D)
- Prohibition on KEMA Inc. or its subsidiary known as KEMA Services Inc. from performing services as a subcontractor or other lower-tier contractor to achieve the objectives of this Agreement (see Exhibit D).
- Access to and use of intellectual property
- Restriction on use of funds to pay for activities defined as labor or construction under the Davis-Bacon Act
- Restriction on activities that would trigger an initial study or environmental analysis under the California Environmental Quality Act

The technical portion of the meeting shall include, but not be limited to, the following:

- The Commission Contract Manager’s expectations for accomplishing tasks described in the Scope of Work
- Updated Schedule of Deliverables
- Updated Gantt Chart
- Progress Reports (subtask 1.2 and Exhibit E )
- Technical Deliverables (subtask 1.4.3)
- The Final Report (subtask 1.4)

Critical Project Review (CPR) Meetings. The goal of the CPR Meetings is to determine if the project should continue to receive Energy Commission funding to complete this Agreement and if so, whether modifications must be made to the tasks, deliverables, schedule, or budget. CPRs provide the opportunity for frank discussions between the Energy Commission and the Contractor. CPRs generally take place at key, predetermined points in the Agreement as determined by the Energy Commission’s Contract Manager (CCM) and as shown in the Technical Task

List on pages 1 and 2 of this Scope of Work, and in the Schedule of Deliverables in Exhibit A, Attachment A-1. However, the CCM may schedule additional CPRs as necessary, and any additional costs will be borne by the Contractor.

Participants include the CCM and the Contractor, and may include the Commission Contracts Officer, other Energy Commission staff and Management as well as other individuals selected by the CCM to provide support to the Energy Commission.

Final Meeting. The goal of the Final Meeting is to close out this Agreement by discussing findings, conclusions, recommendations, and administrative issues such as final invoicing and release of retention. The final meeting must be completed during the closeout of this Agreement. This meeting will be attended by, at a minimum, the Contractor, the Commission Contracts Officer, and the CCM. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the CCM's discretion.

The technical portion of the meeting shall present findings, conclusions, and recommended next steps (if any) for the Agreement. The CCM will determine the appropriate meeting participants. The administrative portion of the meeting shall be a discussion with the CCM and the Contracts Officer about the following Agreement closeout items:

- “Surviving” Agreement provisions, such as repayment provisions and confidential deliverables
- What to do with any state-owned equipment
- The need to file UCC.1 form re: Energy Commission’s interest in patented technology
- The need to document the Contractor’s disclosure of “subject inventions” developed under the Agreement
- Final invoicing and release of retention
- Preparation of a schedule for completing the closeout activities for this Agreement
- The Energy Commission’s request for specific “generated” data (not already provided in Agreement deliverables)

**The Contractor shall:**

- For the Kick-Off Meeting:
  - Attend the meeting with the CCM, the Contracts Officer, and a representative of the Accounting Office.
  - Bring its Project Manager, Contracts Administrator, Accounting Officer, and others designated by the CCM to the meeting.
  - Submit the following to the CCM:
    - Updated List of Leverage Funds
    - Updated List of Permits
    - Updated Schedule of Deliverables
    - Updated Gantt Chart

- For CPR Meetings:
  - Prepare a report for each CPR that discusses the progress of the Agreement toward achieving its goals and objectives. This report shall include recommendations and conclusions regarding continued work of the projects. This report shall be submitted along with any other deliverables identified in this Scope of Work.
  - Submit these documents to the CCM and any other designated reviewers at least five (5) working days in advance of each CPR meeting.
  - Attend each CPR with the CCM, Commission Contracts Officer, other Energy Commission staff and Management, and other individuals selected by the CCM to provide support to the Energy Commission.
  - Present the required information at each CPR meeting and participate in a discussion about the Agreement.
- For the Final Meeting:
  - Meet with the Energy Commission to present findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.
  - Prepare a schedule for completing the closeout activities for this Agreement.

**Contractor Deliverables:**

- For the Kick-off Meeting:
  - Updated Schedule of Deliverables
  - Updated Gantt Chart
  - Updated List of Leverage Funds
  - Updated List of Permits
- For CPR Meetings:
  - CPR Report(s)
  - CPR deliverables identified in the Scope of Work
  - Written documentation of meeting agreements and all pertinent information
- For the Final Meeting:
  - Schedule for completing closeout activities
  - Written documentation of meeting agreements and all pertinent information

**The Commission Contract Manager shall:**

- For the Kick-Off Meeting:
  - Designate the date and location of the meeting.
  - Send the Contractor the agenda and a list of expected participants in advance of the meeting.

- For CPR Meetings:
  - Determine the location, date, and time of each CPR meeting with the Contractor. These meetings generally take place at the Energy Commission, but they may take place at another location.
  - Send the Contractor the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion of both leverage funding and permits.
  - Conduct and make a record of each CPR meeting. One of the outcomes of this meeting will be a schedule for providing the written determination described below.
  - Determine whether to continue the project, and if continuing, whether to modify the tasks, schedule, deliverables and budget for the remainder of the Agreement, including not proceeding with one or more tasks. If the CCM concludes that satisfactory progress is not being made, this conclusion will be referred to the Energy Commission's ARRA Committee for its concurrence.
  - Provide the Contractor with a written determination in accordance with the schedule. The written determination may include a requirement for the Contractor to revise one or more deliverables that were included in the CPR. The written determination may also include the Energy Commission decision on the amount of ARRA EECBG funds to encumber into the Agreement.
- For the Final Meeting:
  - Designate the date and location of the meeting.
  - Send the Contractor final report instructions, an agenda, and a list of expected participants in advance of the meeting.

**Commission Contract Manager Deliverables:**

- For the Kick-Off Meeting:
  - Agenda
  - List of expected participants
- For CPR Meetings:
  - Agenda
  - List of expected participants
  - Schedule for Written Determination
  - Written Determination
- For the Final Meeting:
  - Final Report Instructions
  - Agenda
  - List of Expected Participants

**REPORTING**

***See Exhibit D, Reports/Deliverables/Records and Exhibit E, Reporting and Registration Requirements Under Section 1512 of ARRA.***

### **Subtask 1.2 Monthly Progress Reports and Invoices**

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement and expending the funding on an expedited basis so that all funding has been spent by June 2012.

#### **The Contractor shall:**

- Prepare Monthly Progress Reports using a reporting spreadsheet that will be provided by the CCM. The reports will summarize all Agreement activities conducted by the Contractor for the reporting period, including an assessment of the ability to complete the Agreement within the current budget, progress toward single family and multifamily retrofit, marketing, education, outreach, tool development and workforce development goals, and any anticipated cost overruns.
- Submit each progress report to the CCM within ten (10) working days after the end of the reporting period. Attachment A-2, Progress Report Format, provides the recommended specifications.
- Prepare and submit invoices and supporting documentation for all allowable contract expenses at each stage identified in the program schedule to the Energy Commission's Accounting Office.
- Monitor payment of all invoices and disburse funds as appropriate
- Comply with Reporting and Registration Requirements under Section 1512 of ARRA.

#### **Deliverables:**

- Monthly Progress Reports
- Invoices for all allowable project expenses
- Documentation as needed to support the invoices

### **Subtask 1.3 Subcontractor Management**

The goal of this subtask is to manage and coordinate the activities of all project subcontractors, including quality assurance and coordination with the CCM for any new subcontractors added during the term.

#### **The Contractor shall:**

- Manage and coordinate subcontractor activities.
- Execute agreements with subcontractors named in the proposal.
- Ensure all subcontracts and lower-tier contracts include all flow-down provisions required by the terms and conditions of this Agreement (see Exhibits B, D & E)
- Submit drafts of all first-tier subcontracts to the CCM for review and approval prior to execution.
- Submit copies of all executed subcontracts and lower-tier contracts to the CCM within thirty days.

- Notify subcontractors of all applicable terms and conditions, and obtain their agreement to comply.
- Monitor subcontractor performance and compliance.
- Inform the CCM in writing of any new proposed subcontractors.

**Deliverables:**

- Draft subcontracts
- Final subcontracts
- Notices of new proposed subcontractors

**Subtask 1.4 Final Report**

The goal of this task is to prepare a comprehensive written Final Report that describes the original purpose, approach, results and conclusions of the work performed under this Agreement. The CCM will review and approve the Final Report. The Final Report must be completed on or before the termination date of the Agreement.

The Final Report shall be a public document. If the Contractor has obtained confidential status from the Energy Commission and will be preparing a confidential version of the Final Report as well, the Contractor shall perform the following subtasks for both the public and confidential versions of the Final Report.

**Subtask 1.4.1 Final Report Outline**

**The Contractor shall:**

- Prepare a draft outline of the Final Report. Submit the draft outline of Final Report to the CCM for review and approval. The CCM will provide written comments to the Contractor on the draft outline within ten (10) working days of receipt.
- Submit the Final Outline to the CCM once agreement has been reached on the draft. The CCM shall provide written approval of the final outline within five (5) working days of receipt.

**Deliverables:**

- Draft Outline of the Final Report
- Final Outline of the Final Report

**Subtask 1.4.2 Final Report**

**The Contractor shall:**

- Prepare a Draft Final Report for this Agreement in accordance with the approved outline.
- Submit the Draft Final Report to the CCM for review and comment. The CCM will provide written comments within ten (10) working days of receipt.
- Submit one bound copy of the Final Report with the final invoice.



**Deliverables:**

- Draft Final Report
- Final Report

**Subtask 1.4.3 Test Plans, Technical Reports and Interim Deliverables**

The goal of this task is to set forth the general requirements for submitting test plans, technical reports and other interim deliverables, unless described differently in the Technical Tasks.

**The Contractor shall:**

- Unless otherwise indicated in this Scope of Work, submit a draft of each deliverable listed in the Technical Tasks to the CCM for review and comment in accordance with the approved Schedule of Deliverables. The words “no draft” will appear in parentheses next to deliverables that do not require a draft. The CCM will provide written comments back to the Contractor on the draft deliverable within ten (10) working days of receipt.
- Submit the final deliverables to the CCM once agreement has been reached on the draft. The CCM will provide written approval of the final deliverable within five (5) working days of receipt. Key elements from this deliverable shall be included in the Final Report for this project.

**LEVERAGE FUNDS, PERMITS, AND ELECTRONIC FILE FORMAT****Subtask 1.5 Identify and Obtain Leverage Funds**

The goal of this task is to ensure that the leverage funds planned for this Agreement are obtained for and applied to this Agreement during the term of this Agreement.

The costs to obtain and document leverage fund commitments are not reimbursable through this Agreement. While the budget for this task will be zero dollars, the Contractor may utilize leverage funds for this task. Leverage funds shall be spent concurrently or in advance of the EECBG discretionary funds that are the subject of this Agreement. Leverage funds must be identified in writing, and the associated commitments obtained before the Contractor can incur any costs for which the Contractor will request reimbursement.

**The Contractor shall:**

- Prepare a letter documenting the leverage funding committed to this Agreement and submit it to the Commission Contract Manager at least two (2) working days prior to the kick-off meeting:
  1. If no leverage funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then state that in the letter.
  2. If leverage funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter:

- A list of the leverage funds that identifies the amount each cash leverage fund, its source, including a contact name, address and telephone number, and the task(s) to which the leverage funds will be applied.
- A list of the leverage funds that identifies the amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and the task(s) to which the leverage funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Contractor shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.
- A copy of the letter of commitment from an authorized representative of each source of cash leverage funding or in-kind contributions that these funds or contributions have been secured.
- Discuss leverage funds and the implications to the Agreement if they are significantly reduced or not obtained as committed, at the kick-off meeting. If applicable, leverage funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the Commission Contract Manager if during the course of the Agreement additional leverage funds are received.
- Notify the CCM within ten (10) working days if during the course of the Agreement existing leverage funds are reduced. Reduction in leverage funds may trigger an additional CPR.

**Deliverables:**

- Letter regarding Leverage Funds or stating that no Leverage Funds are provided
- Letter(s) for New Leverage Funds
- Copy of each Leverage Fund commitment letter
- Letter that Leverage Funds were Reduced (if applicable)

**Task 1.6 Identify and Obtain Required Permits**

The goal of this task is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track.

Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement. While the budget for this task will be zero dollars, the Contractor shall show any leverage funds used for this task. Permits must be identified in writing and obtained before the Contractor can incur any costs related to the use of the permits for which the Contractor will request reimbursement.

**The Contractor shall:**

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the Commission Contract Manager at least two (2) working days prior to the kick-off meeting:

1. If there are no permits required at the start of this Agreement, then state such in the letter.
2. If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
  - A list of the permits that identifies the:
    - Type of permit
    - Name, address and telephone number of the permitting jurisdictions or lead agencies
  - Schedule the Contractor will follow in applying for and obtaining these permits.
- The list of permits and the schedule for obtaining them will be discussed at the kick-off meeting, and a timetable for submitting the updated list, schedule and the copies of the permits will be developed. The implications to the Agreement if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in the progress reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, then provide the appropriate information on each permit and an updated schedule to the CCM.
- As permits are obtained (including air quality), send a copy of each approved permit to the CCM.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CCM within five (5) working days. Either of these events may trigger an additional CPR.

**Deliverables:**

- A letter documenting the Permits or stating that no Permits are required
- Updated list of Permits as they change during the Term of the Agreement
- Updated schedule for acquiring Permits as it changes during the Term of the Agreement

**Commission Contract Manager Deliverables:**

- CCM Approval of Contractor Deliverables

**Task 1.7 Electronic File Format**

The goal of this task is to unify the formats of electronic data and documents provided to the Energy Commission as contract deliverables. Another goal is to establish the computer platforms, operating systems and software that will be required to review and approve all software deliverables.

**The Contractor shall:**

- Deliver documents to the Commission Contract Manager in the following formats, unless otherwise specified in this Scope of Work:
  - Data sets shall be in Microsoft (MS) Access or MS Excel file format.
  - PC-based text documents shall be in MS Word file format.
  - Documents intended for public distribution shall be in PDF file format, with the native file format provided as well.
  - Project management documents shall be in MS Project file format.
- Request exemptions to the electronic file format in writing at least ninety (90) days before the deliverable is submitted.

**Deliverables:**

- A letter requesting exemption from the Electronic File Format (if applicable)

**Task 1.8 Submission of Waste Management Plan Framework and Waste Management Plans**

The goal of this task is to ensure that the Contractor submits a Waste Management Plan Framework, and applicable waste management certification and compliance forms, to the CCM prior to project activities under this Agreement that may generate any sanitary or hazardous waste. While the EECBG funding under this Agreement does not directly support any activities that will generate waste, the retrofits carried out under the single-family and multi-family programs implemented in Task 2 will generate waste. Therefore, Contractor will initially prepare a Waste Management Plan Framework that provides a process and assurance that Contractor will obtain and submit to the CCM project-specific Waste Management Plans, or certification and compliance forms, from subcontractors and partners which are responsible for carrying out those retrofits. The Waste Management Plan Framework must describe the Contractor's plan to ensure that disposal of any sanitary or hazardous waste generated by any proposed project activities complies with all federal, state and local laws. Sanitary and hazardous waste includes, but is not limited to: construction and demolition debris, old light bulbs, fluorescent ballasts and lamps, piping, roofing material, discarded equipment, debris, and asbestos. Attachment A-3 is offered as guidance in preparing the Waste Management Plan Framework. Any subcontractor, partner or other entity carrying out retrofits under this program implemented under Agreement will need to complete a Waste Management Plan by completing, signing and submitting to the CCM the certification and compliance form included as Attachment A-4, as that form may be updated by the Energy Commission to assist Contractor with compliance with DOE guidance and federal, state and local waste management laws.

**Deliverables:**

- Waste Management Plan Framework
- Waste Management Certification and Compliance Forms

### **Task 1.9 Historic Preservation Consultation**

The goal of this task is to ensure that the Contractor complies with the requirements of Section 106 of the National Historic Preservation Act (NHPA) prior to expenditure of EECBG funds under this Agreement to alter any structure or site. The Energy Commission has executed a Programmatic Agreement with the California State Historic Preservation Officer (SHPO) to streamline the Section 106 consultation process. Under the Programmatic Agreement, the Energy Commission will evaluate projects to determine whether they are categorically excluded from the SHPO's direct review and consultation.

While the EECBG funding under this Agreement does not directly support any activities that will alter any structure or site, the retrofits carried out under the programs implemented in Task 2 will alter structures and sites. Therefore, the requirements of Section 106 apply to all retrofits accomplished under this Agreement.

#### **The Contractor shall:**

- Consult with the Energy Commission (and with the SHPO and the Tribal Historic Preservation Officer, if applicable) to ensure that the proposed project(s) will have no adverse effects on historic resources.
- Prepare a Consultation Package as specified by the Energy Commission no later than thirty (30) days after the execution of this Agreement or the identification of the project structure(s) or site(s) to be retrofitted under the Agreement, whichever is later. The Energy Commission may specify an earlier time for submittal of the Consultation Package if retrofit work is expected to begin within less than thirty (30) days of project identification.

#### **Deliverables:**

- Consultation Package

## **TASK 2 PROGRAM DELIVERY / TECHNICAL TASKS**

Unless otherwise specified in the individual Task, the Contractor is responsible to ensure that all deliverables are prepared in accordance with the requirements in Subtask 1.4.3. Unless otherwise specified in each technical task, the Contractor shall submit a draft of each deliverable listed in the technical tasks to the CCM for review and comment in accordance with the approved Schedule of Deliverables in Exhibit A, Attachment A-1. The words “no draft” will appear in parentheses next to deliverables that do not require a draft.

The CCM will provide written comments to the Contractor on the draft deliverable within ten (10) working days of receipt. Once agreement has been reached on the draft, the Contractor shall submit the final deliverable to the CCM. The CCM shall provide written approval of the final deliverable within five (5) working days of receipt. Key elements from the deliverable shall be included in the Final Report for this project.

### **Compliance with the 10% Loading Order Requirement before HERS II is Available**

In the event the term for this Agreement begins before certified HERS II Raters are available in the Contractor's performance region, Contractor shall use either the Energy Commission prescriptive list (see below) or an Energy Commission interim performance approach for residential buildings (also explained below), to meet the requirement of achieving at least a 10% energy efficiency improvement at each proposed project site before renewable projects are eligible for financing.

To comply with the Energy Commission approved prescriptive list, residential buildings will be required to install all of the following measures (Combustion Safety and CO alarm not required if already performed/installed), consistent with Energy Commission technical specifications for each measure (such as Annual Fuel Utilization Efficiency rating of furnace, R-value of insulation, when measures are feasible, etc.):

- a. Air Sealing,
- b. Attic insulation,
- c. Duct test and seal or replacement,
- d. Insulation of Domestic Hot Water or replacement,
- e. Combustion Safety (requires BPI Building Analyst), and
- f. CO Alarm

For residential buildings where it is not feasible to install all of the first four measures (measures a through d) in the Energy Commission prescriptive list, including when some of the measures have been previously installed or when measures are otherwise not feasible as indicated in the technical specifications, the Energy Commission-approved prescriptive list cannot be used. In these cases, an Energy Commission interim performance approach for the building must be used to determine compliance with the 10 percent energy improvement requirement prior to financing renewable projects for the building. The Energy Commission may consider alternate approaches to achieve the Energy Commission's loading order policy for each residential renewable

project site. If the Energy Commission approves an alternate approach, the CCM shall provide this approved approach to the Contractor in writing.

From January 1, 2011 through the end of this Agreement, energy audits shall comply with HERS II standards and software. This date may be extended upon Energy Commission approval, to adjust for delays in HERS II availability.

For proposed multifamily building sites outside the scope of HERS II, the CCM shall consider in consultation with the Contractor an energy audit methodology to be used by the Contractor to meet the 10% energy improvement requirement prior to financing renewable projects. The CCM shall provide an approval in writing of the methodology.

### **Task 2M<sup>1</sup>: Program Delivery - MULTI-FAMILY PROGRAM**

HMG will lead the multi-family program and develop the long overlooked infrastructure (tools and expertise) to support a sustainable whole-building, deep energy savings program for multi-family buildings that builds on and extends HERS II. This performance-based program will specifically target Tier III and encourage building owners to upgrade their older building stock to improve efficiency by a minimum of 20% over existing conditions. The program will target affordable and market-rate building owners with a portfolio of buildings. HMG will educate the building owner and provide information about other available programs to help offset some of the costs to implement energy efficiency measures.

### **Subtask 2.1M: Program Implementation Plan (PIP)**

The goal of this subtask is to develop a Program Implementation Plan (PIP) that clearly outlines goals, objectives and activities. The PIP will provide detailed activities, milestones, timeframes, and roles and responsibilities for each subcontractor and partner in program delivery, reporting, and EM&V for each program component. The PIP will also contain contingency plans for the critical components of the program. Finally, the PIP will provide the Energy Commission an opportunity to review and approve all significant documents and agreements prepared and executed by the Contractor in carrying out the PIP.

### **The Contractor shall:**

Develop a Program Implementation Plan (PIP) that details each program component for multi-family buildings. The PIP will provide a roadmap to develop and implement the following:

- Identification of Goals, Objectives and Activities – Identify specific activities, goals and objectives for each program component
- Policies and Procedures – Develop internal policies and procedures with regard to implementation, and external policies and procedures for building owner and HERS consultant participants. Policies and procedures shall include compliance with

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<sup>1</sup> Subtasks under Task 2 are shown as either “S” referring to the Single Family Program or “M” referring to the Multi-Family Program.

National Historic Preservation Act and Waste Management Plan Framework requirements.

- Marketing Plan – Identify target markets and outline customer enrollment, marketing strategies, and participation in the Energy Upgrade California branding effort. Draft MOUs with marketing partners.
- Coordination Plan – Describe collaboration objectives and efforts with national, state, and utility programs, including HERS II, the Building Performance Institute (BPI), affordable housing finance programs, Neighborhood Stabilization Program, and weatherization funding. Draft MOUs with all partners that will be involved in this collaboration.
- Technical Assistance – Develop strategies to optimize energy savings
- Building Simulation – Design an approach for developing protocols consistent with HERS Phase II
- Verification of Energy Savings – Develop plan checking protocols and verification of energy savings methodologies
- Leverage Funds – Develop and maintain a list of leveraged funds that will directly contribute to the success of the program
- Workforce Development Plan – Design training and provide support of workforce in Tiers II and III. Develop MOUs with all partners in the program working to accomplish workforce development, including Green Jobs Training programs and independent training providers (such as HERS II providers)
- Training – Conduct training on audit and verification protocols and building simulation tools
- Quality Assurance – Design methods of permit and proper licensure verification, Inspection and verification of installation, coordination with HERS II and BPI
- Tracking – Develop participant data and tracking procedures
- Ongoing Energy Savings – Develop energy management guidelines and tenant conservation training and information
- Contingency plans to lower the risk that critical program components are not accomplished. The fundamental risk is that the funding awarded for this program will not be expended and will have to be returned to the federal government for failure to design and develop the marketing and education materials, develop the simulation and navigational tools, and develop, incentivize and support the retrofit workforce that are the objective of the program. To mitigate this fundamental risk, a monthly deployment schedule of all activities that contribute to successful completion of the tasks in this contract shall be developed, and the Contractor shall actively monitor progress against this deployment schedule, identify problems and keep the Contract Manager actively informed, so that Critical Program Review meetings can be called as necessary. As part of these contingency plans, the consultant will develop an interim plan for data collection, building simulation, and verification to allow time for ramp-up of HERS II infrastructure and training. This plan will use proven methods of audit and analysis utilized through the Designed for Comfort program, and adapted to include energy loads not evaluated by the Title 24 compliance software used in this methodology.



**Deliverables:**

- Program Implementation Plan
- Marketing Plan,, including MOUs signed by all partners working on marketing
- Coordination Plan including all MOUs signed by all partners involved in collaboration
- Workforce Development Plan, including MOUs signed by all partners working on workforce development.
- Building Simulation Approach
- Risk Assessment and Contingency Plans

**Subtask 2.2M: Tracking System****The Contractor shall:**

Build upon HMG's existing database for multi-family programs to develop a customized system for reporting, tracking and research. The following information will be tracked on a regular basis:

- Projects - Project information including owner contact information, site contact, number of units, building area, energy savings, existing conditions, measures/equipment upgrades, HERS Rater contact information, construction schedules, HERS inspection dates, record coordination activities between the various parties involved in the rehab process of the projects.
- Training – All training participants
- HERS Rater/Inspector/Analyst Incentives: Payments to HERS Raters, Inspectors, and Analysts

**Deliverables:**

- Tracking database output
- Monthly reporting on data tracked

**Subtask 2.3M: Marketing Materials****The Contractor Shall:**

Promote the MF program, the team will develop a set of simple marketing materials (detailed in the PIP) to distribute at conferences, meetings, and other venues attended by multi-family housing owners. These materials, may include but not be limited to:

**Marketing Materials**

- Program Application
- Program Brochure
- Exhibit Panel
- Direct Marketing Material (Email)
- PowerPoint Presentations
- Ads in Conference Programs
- Web site

**Deliverables:**

- Program Application
- Program Brochure
- Website Design
- Other Marketing Materials (no draft)

**Subtask 2.4M: Marketing, Education, and Outreach: Participant Recruitment**

The contractor will coordinate its marketing, education and outreach strategically and cooperatively to recruit 1000 units and influence building owners to make appropriate energy-efficiency and retrofit improvements to their properties and increase their energy conservation behaviors in a tiered approach.

**The Consultant Shall:**

Lead the marketing efforts for the multi-family retrofit program that will target affordable and market-rate building owners who have a portfolio of buildings, consistent with the marketing plan.

The marketing strategy builds upon the momentum of implementing the Designed for Comfort (DfC) program since 2002. Years of program implementation targeting multi-family and affordable housing throughout the state have resulted in an established database and tracking system, and well-developed relationships with building owners and stakeholders in the multi-family housing industry. During the development of this proposal, HMG surveyed area multi-family building owners to obtain their interest and identify potential projects for participation. A majority of respondents indicated interest in a whole-building incentive program and many of them provided project information to contact them should the program be funded. While the marketing materials are being developed, the Contractor will contact these survey respondents as well as send out email notices via HMG's database and partner housing associations to begin recruiting projects as soon as the program design is finalized. The Contractor will conduct ongoing project recruitment through local government housing, building, planning, and redevelopment agencies, as well as the following:

- Conference presentations and exhibitions
- Ad placement in conference programs, as exhibit or sponsorship fee allows
- Publishing articles in industry newsletters
- Direct email marketing
- Encouraging potential participants to visit the web site
- Coordination and cross-promotions with other third-party and utility programs
- Coordination with housing associations and public agencies involved with housing owners
- Researching publicly available multi-family housing project lists (e.g., California Tax Credit Allocation Committee (TCAC), California Debt Limit Allocation Committee (CDLAC), Local Initiatives Support Corporation (LISC), HUD, and local housing authorities)

The Contractor will also collaborate with CABEC, BPI affiliates and the HERS providers to utilize existing lines of communication to recruit HERS raters, inspectors and

analysts, building performance contractors program and training participation. Unlike the single-family program, the multi-family program model is based on the “consultant model” rather than the “contractor model.” However, a building owner could choose to employ the contractor model by selecting a building performance contractor to conduct the audit, analysis, installation and verification as long as the contractor is BPI accredited and HERS II certified.

The program marketing effort shall be directly linked with HMG’s in-house established recruitment tracking system. The Contractor shall track the results of the marketing efforts within its tracking database, which will help determine where and how to most effectively market the program in the future.

**Deliverables:**

- Marketing Plan

**Subtask 2.5M: Audit and Verification Protocols for Multi-family (MF) Buildings**

The goal of the multi-family audit is to inventory existing conditions of the multi-family dwellings/buildings being evaluated in a manner that facilitates the efficient entry of this data into an energy modeling software. This includes physical dimensional data related to the building architecture (floor plans) as well as data related to the building’s energy features. This will include the development of protocols for making assumptions about energy features when specific information cannot be gathered. These protocols exist for single family detached dwellings (e.g., California Energy Commission vintage tables). Similar and consistent protocols will be developed for multi-family dwellings as needed.

**The Contractor Shall:**

Develop an energy audit program for multi-family dwellings comparable and parallel to the existing HERS II program, and address both low-rise and high-rise building types. The CalCERTS application for approval with the California Energy Commission to be an approved HERS II (Whole House Rater Program) and Building Performance Contractor program is currently under review. CalCERTS has staff people who are BPI certified as Multi-family Building Analysts. Additionally, CalCERTS has applied to be a BPI Affiliate. CalCERTS is a recognized expert in HERS II protocols and training, making the transition to a multi-family program much less complicated. Relatively little work is needed to incorporate low-rise multi-family dwellings. Most of the work will be required for multi-family buildings four or more stories in height (high-rise). When dwellings do not share a central HVAC or water heating system, this process is much simpler.

The consultant shall, in coordination with the HERCC Multi-Family audit standards, undertake the following steps in developing a set of audit protocols from which to base the HERS II multi-family training curriculum:

- Review 2008 HERS II Technical Manual (CEC-400-2008-012-CMF) for procedures that are neutral for multi-family versus single-family and those that are specific to single-family dwellings. Develop comparable multi-family audit procedures as needed.

- Work with Energy Soft (Energy Pro Software) to ensure software tool accommodates new multi-family protocols.
- Develop field verification and diagnostic testing protocols unique to multi-family buildings. This would include the adaption of standardized field data collection forms, pre- and post-upgrade reports and HERS certificates.
- Review the 2008 Reference Appendices (CEC-400-2008-004-CMF), sections RA2 and RA3, which contain the current HERS procedures and protocols. These protocols will be reviewed for those that are generic for both multi- and single-family. Protocols that are specific to single-family will be evaluated for modification for application to MF dwellings, including NSHP PV verification protocols.
- Develop multi-family specific HERSII protocols as necessary, maintaining the format and spirit of the existing protocols with the intent for future consideration and adoption by the Energy Commission and consistent with HERS Tests for 2008 Title 24 Energy Codes.

**Deliverables:**

- HERS II audit and verification protocols for multi-family buildings, based on HERCC standards, and approved by the Energy Commission

**Subtask 2.6M: HERS Rater and Analyst, and Building Performance Contractor Training on Audit, Simulation, and Verification Protocols for Multi-family**

**The Contractor Shall:**

- Conduct HERS II multi-family training that will build on the skills of existing HERS raters and building performance contractors to lead and coordinate multi-family whole-building assessments per program requirements, and based on the results of Subtask 2.5M.
- Work with workforce development and training programs in the region, in coordination with CCSE's efforts, including Community Colleges, Green Jobs Training programs and others to develop a multi-family training curriculum for HERS II Energy Inspectors to serve Tier I and II activities.
- Utilize a team approach between the HERS Rater, Inspectors, and Analysts, and Building Performance Contractors. Because multi-family buildings are more complex than single family, having a team approach will allow individuals to be more specialized while providing work for a broader base of professions, which will add to the sustainability of jobs subsequent to this work. The contractor will also encourage an integrated approach whereby one HERS Rater is qualified and certified to conduct HERS energy audits, building simulations and verifications.
- Coordinate with workforce development programs in the areas to be served by this program.

**Deliverables:**

- Training curriculum and materials
- HERS II Trainings (two trainings within year 1)
- Energy Inspector curriculum based on the HERCC standards
- Energy Inspector training (4 trainings)
- Building Performance Contractor training

**Subtask 2.7M: HERS II Software Extension to Develop a Multi-family Building Simulation Tool****The Contractor shall:**

Develop a multi-family analysis tool that will build upon the existing EnergyPro platform and HERS II tools. HERS II software tools can be used with little additional modification for most low-rise multi-family buildings. However, although EnergyPro can accurately model Title 24 code compliance for high-rise buildings, a larger effort will be necessary to create a HERS II tool for this application. All simulation tools will be approved by the California Energy Commission prior publication and use by program participants.

Using the EnergyPro compliance engine, consistent with the HERS Phase II procedures, a baseline multi-family building description will be assembled by the software based upon the existing condition described by the user, including utility rate information. Utility rate information will come from the CalCERTS HERS provider database of rates that have been assembled, through a collaborative effort between EnergyPro, all providers, and agreed to by the Energy Commission.. An annual energy simulation will be performed, with results reported as follows:

- Annual TDV Energy Usage by End Use
- Annual and Monthly Electricity Consumption
- Annual and Monthly Electricity Demand
- Annual and Monthly Therm Consumption
- Annual and Monthly Electricity Cost
- Annual and Monthly Fossil Fuel Cost

The building simulation tool will determine a building's existing conditions, relative to Title 24 and Net Zero. The results from this simulation will formulate the baseline for comparison to a series of alternative efficiency measures (upgrades). A feature will be provided to allow the study of up to fifteen different energy efficiency measures as designated by the user, including the incorporation of measure cost to facilitate life cycle cost analysis. Measure cost will be taken from the database supplied by the CalCERTS HERS provider. The user will always be provided with a set of recommended measures resulting from the use of the "Standard Approach," which uses the "rolling basecase" approach described in the HERS Technical Manual (HTM). This approach will allow for the incremental addition of alternatives to the existing building based upon cost effectiveness determination as outlined in the HTM. The user also will have the option of studying the efficiency upgrades as individual measures for improvement.

Reporting of results will be in the form of an XML data file that will allow for upload into a database as well as allow for web based reporting of information that includes the following:

- Complete description of the existing building as modeled, including assumptions for utility rates
- Simulation results, as listed above, for the existing building.
- Description of each of the alternatives, including measure cost
- Simulation results, as listed above, for each of the alternatives

Based on the developed multi-family building simulation tool in Task 4, the Contractor will develop a training curriculum and will train HERS raters and Analysts to use the tool in concert with the developed audit and verification procedures outlined in Subtask 2.5M.

**Deliverables:**

- Simulation Tool (Energy Commission to review during development)
- Training curriculum and materials
- Training sessions (4)
- Acceptable XML output file format for reporting results of the work

**Subtask 2.8M: Multi-Family Plan Check and Design Assistance**

The Multi-family Program will verify energy savings (on a representative percentage of projects) through a building simulation tool and subsequent plan check, and quality assurance on audits and verification. The building simulation tool will be used to model a building's existing conditions, and its performance relative to Title 24 and Net Zero, as well as compare proposed upgrade options. Benchmarking, through EPA's Portfolio Manager will help to track energy savings pre and post program participation. However, because the utilities currently have no process for aggregating whole building energy usage for multiple meters at one address, only the common areas for these buildings will be tracked. For master-metered buildings, energy savings for the whole building will be tracked.

For individually metered buildings, coordination with SDG&E may allow for aggregation of utility data. Assuming utility cooperation and approved release of aggregated data, the data may be used in developing project-specific utility allowances for affordable housing projects. Currently the California Utility Allowance Calculator (CUAC) is legally applicable to new construction projects only. A comparison of real utility data to simulated energy use through this program will be used to seek approval of the use of the CUAC tool for rehab projects.

**The Contractor shall:**

1. Require a thorough plan check by contractor's staff of Certified Energy Plans Examiners. Before the project is considered a participant under the Multi-family Program, the Contractor will complete a plan check to fully document each energy related feature using the following checklist:

- Climate Zone, project location, ownership, other project details

- Number of units, area and orientation of units in each building
- Electronic Performance files are available for all buildings and units in the project
- HVAC system information is complete and equipment types are consistent with the systems specifications
- Water heating system information is complete and types match
- Envelope details (e.g., insulation, fenestration) are complete and match

If the initial eligibility review plan check results in questions about the thoroughness, accuracy or compliance of the documents, the Contractor will discuss any deviations with the developer and/or design team. Clarification of design intent during the plan check is integral to the Multi-family Program's design assistance service. Interactions during plan check reinforce the Contractor's established communication with the developer and design team, and help lessen the risk of any information being lost or misinterpreted.

The Contractor's staff of Certified Energy Plans Examiners will perform a thorough plan check in coordination with each project's primary contact person (e.g., project architect, HERS rater, developer).

The Contractor will conduct the plan review process for the MF Program plan check as follows:

- Review baselines and proposed energy calculation files from the HERS Rater/Analyst (of the multi-family existing buildings software that EnergySoft outlined in Subtask 2.7M) to verify that:
  - Existing conditions have been modeled correctly and accurately reflect the existing conditions outlined by the auditor.
  - The upgraded conditions have been modeled correctly and the energy savings are at least 20% of existing baseline conditions based on the Contractor's internal plans check tool.
- Offer design assistance to suggest measures to enhance energy savings.
- Notify the HERS Rater/Analyst once the building simulation files are approved, and then upload these files to the HERS Provider website from which the HERS Rater can retrieve the files. At this point, the HERS rater will submit an Existing Conditions inspection report.
- Provide the building owner participant with an Energy Measures Summary of the approved measures and specifications approved to qualify the property into the program if the measures are verified as installed. If the building owner deviates from this list of approved measures, then they must either recalculate the energy savings to determine if they still qualify or risk being disqualified from the program.
- Collect specification sheets for any newly installed energy measures. For example: the CF-6R from the Insulation Contractor; CF-6R and/or Manufacturer's NFRC data for glass windows and/or doors; CF-6R and/or Manufacturer's Equipment specification sheets indicating efficiencies for HVAC and water heaters.
- Track the energy measures and savings for each project.

2. Provide design assistance to improve the energy performance of a project in the event it does not qualify due to:

- insufficient energy savings, or
- mischaracterization of project details

When these two common problems arise, the Contractor will discuss the issues with the building owner team, and work with them to find solutions. The extent of design assistance will vary by project, based on the needs of the client and the willingness and ability of the design team or HERS rater/analyst to perform this role. The Contractor will meet with the project owner in person or by conference call to discuss the merits of the energy efficiency upgrade options and help them select the measures that will meet their goals as well as program goals. The meeting may include the HERS rater/analyst and other project stakeholders.

For each participant project, the Contractor will evaluate the baseline and energy savings (kW, kWh, and therms) calculations using an energy impacts worksheet as part of the plan check procedures. The worksheet will provide information on total square feet of each project, climate zone, kBtu saving/yr for heating, cooling and water heating. The total kBtu savings/yr is translated into total kWh and therm savings per project, and subsequently kW.

3. Pilot the California Utility Allowance Calculator (CUAC) for use on existing multi-family buildings, through:

- Coordination with SDG&E to collect aggregated post-retrofit utility data for participating projects
- Comparison of post-retrofit data to simulated (projected) energy use through HERS II and the CUAC
- Coordination with TCAC to approve the use of the CUAC for developing project-specific utility allowances for existing properties

#### **Deliverables:**

- Plan Checking Protocols
- Energy Impacts Worksheet
- Plan Checking Summary of Participating Projects (updates in monthly report)

#### **Subtask 2.9M: Quality Assurance**

The Multi-family Program will have a high level of proven quality assurance procedures as detailed in the policies and procedures section of the program implementation plan. The policies and procedures will provide step by step procedures to ensure and demonstrate:

- Project Energy savings (through plan review and design assistance as outlined in Subtask 2.8M)
- Quality of energy audits
- Installed measure verification and diagnostics where appropriate
- Quality of installed energy improvements by well-qualified contractors
- Ongoing cost-effectiveness
- Reputation of the program



**The Contractor shall:**

- Provide training and checklists to certified HERS raters who are providing energy audits/ratings of existing multi-family buildings as detailed in the scope of work. CalCerts will apply HERS Quality Assurance protocols to these audits. Quality Assurance will not be done on projects that participate in the mentoring program since the mentor's presence would satisfy the QA requirement.
- Ensure that a HERS rater will inspect the installation to ensure that the equipment matches the specifications and those outlined in the Energy Measures Summary. In addition to requiring a HERS inspection for each participating project, the Multi-family Program will adhere to HERS Quality Assurance protocols. If a deficient verification is discovered, Multi-family Program staff will work directly with the HERS rater and the installing contractor to remedy the situation.
- Develop language to provide to developers to ensure that they incorporate quality installation clauses/language into their contracts with their contractors. The language will indicate that the contractors must install equipment or perform work according to manufacturer instructions and Title 24 standards. Further, they will be informed that their installation/construction will be verified by a HERS rater and if there are any quality issues, they will be held responsible. For property owners that do not already have contractors to work with, the Contractor will provide them with a list of contractors who have been trained through the Building Performance Institute or other regional training offered through ARRA funding.
- Clearly delineate roles and responsibilities and with the input of other regional program partners develop a participant evaluation process, whereby participants can rate the MF program services through a survey and provide feedback on program improvements. The Contractor will respond promptly to issues and will work with regional residential retrofit program administrators to implement feasible program improvements suggestions.
- Keep diligent records and electronic and paper files for each participating project, including all building simulation files, signed program documents and agreements, as well as communication between the participant and MF Program staff. HMG has an extensive database through which we have experience in tracking thousands of multi-family units throughout the rehab and new construction process.

**Deliverables:**

- Quality Assurance Procedures (draft)
- Audit Quality Assurance Checklists and Protocols
- Quality Assurance Summary (updates in monthly reports)
- Quality Installation Clauses/Language
- Cost Effectiveness Reports (ongoing and included in monthly reports)
- Participant Survey Results (draft and as requested by CCM)

## **Subtask 2.10M: Conformance with California Law**

### **The Contractor shall:**

- Design a building owner-signed application that will insure that applicable permits are pulled and submitted as part of the application, and energy improvements are installed in conformance with California law.
- Insure that through energy audits and plan checks, that Title 24 measures and field verification requirements for alterations will be met. The application will also provide demonstration that selected contractor(s) are in good standing with the Contractor State License Board, and the work is within the scope of their licensure.
- Require that applicants sign and return the Energy Measures Summary (outlined in section X) as a contractual scope of work, detailing an upgrade package of measures that meets program criteria. The contractor will work to ensure that the program participant activities are in conformance with California law.

### **Deliverables:**

- Application
- Energy Measures Summary Template

## **Subtask 2.11M: Collaboration with State and National Programs**

### **The Contractor shall:**

Collaborate with State and National Programs as provided in the Collaboration Plan, including but not limited to HERS Phase II, Home Performance with Energy Star, Building Performance Institute, affordable housing financing programs, such as the Neighborhood Stabilization Program, Energy Efficiency Mortgages, and the FHA 203K loan program and SDG&E's Whole-House Program.

Collaborate with the Energy Commission and the California Tax Credit Allocation Committee (TCAC) to pilot an effort to determine the applicability of the California Utility Allowance Calculator (CUAC) to existing multi-family buildings. This effort will entail comparing simulated (HERSII CUAC) against actual billing data (if aggregated billing data is available or by using a sampling method), determining the appropriate verification protocols, and proposing policy for TCAC to consider replicating the use of CUAC for existing buildings throughout the state.

### **Deliverables:**

- Report ongoing collaboration in monthly reports

## **Subtask 2.12M: Workforce Development**

Implementation of this program will create jobs for HERS Energy Inspectors who under the supervision of certified HERS raters provide onsite inspection services of the energy-related features of multi-family buildings.

### **The Contractor shall:**

Consistent with the Marketing Plan and MOUs, work with workforce development and

training programs in the region, including Community Colleges, Green Jobs Training programs and independent training providers (such as CBPCA and HERS II providers), conduct a training needs assessment for multi-family energy inspectors.

- Collaborate with training providers to ensure a training program(s) is made available for multi-family energy inspectors. Actively collaborate with all the training providers to ensure that the training they provide meets the needs of this program.
- Ensure that multi-family energy inspectors are included in the subsidized on-the-job training and internship programs conducted by Manpower for training graduates.
- Provide initial mentoring support and ongoing technical support to multi-family energy inspectors who are newly graduated from training programs. Provide initial onsite mentoring by an instructor or other qualified and experienced HERS Rater or HERS Energy Inspector accompanying the graduate on an initial multi-family energy inspection to ensure that the graduate understands and can implement their training. Provide ongoing access for the multi-family energy inspector training graduates over the life of the program for technical and other assistance.
- Provide a list of multi-family energy inspector training graduates on the program website.

**Deliverables:**

- Procedures for administering mentoring program
- Reports of Coordination with workforce development and training providers including reporting on progress and success of the mentoring program (ongoing).

**Subtask 2.13M: Navigational Tool**

The Contractor proposes to develop a navigational tool that will help building owners to rank and categorize their buildings according to energy savings opportunity, determine what program approach (Tier II or Tier III) should be pursued for each property, and determine what incentives would be applicable and what resources are available to work on the project (connection to workforce development). This navigational tool will:

- Help building owners make the best decisions about energy efficiency investments
- Encourage all properties to take some action, even if the whole-building approach is not appropriate
- Encourage ongoing energy management by promoting subsequent annual assessments through creation of a user account with log-in for return visits and for project tracking.
- Help to minimize confusion about which program is best for their projects
- Cross-promote and foster coordination among programs that impact the market
- Cross-promote and foster coordination among workforce development programs
- Address Tiers I and II by driving properties to Tiers I and II-type existing approaches, programs, and expertise

**The Contractor shall:****1. Develop a process, and a tool that will:**

- Sharpen building managers' awareness of building characteristics and systems, and their replacement history through basic data collection of existing building components and vintages (year installed or last replaced)
- Create a market niche for Energy Inspectors (see Subtask 2.12M) to assist building owners in data collection for input into the tool
- Compare existing conditions and equipment against current Title 20 and Title 24 prescriptive standards to identify possible energy savings opportunities. Where existing conditions are unknown, they will be estimated based on the Energy Commission Vintage Table.
- Assess and rank properties based on need, energy savings opportunity and financing/funding availability (e.g., a tax credit project in year 15, or a property looking to refinance, would represent a financial opportunity to make property improvements and would be high priority projects within the portfolio)
- Categorize properties to match up with rehab program approaches, (weatherization, tune-up, equipment replacement or whole-building) and program. Projects that are not appropriate for the whole-building program (e.g., a newer building that needs to replace a single piece of equipment, but would not realistically reduce energy use by 20%) will be guided to more appropriate programs, such as a tune-up or equipment replacement program.
- Steer properties with deeper energy savings opportunities to the Multi-family Program proposed as a whole-building, comprehensive approach, which would entail hiring a HERS Rater and/or HERS Analyst to more deeply assess the building upon the initial audit, conducting a whole-building analysis, and providing recommendations to the building owner.
- Assess the property's PV "readiness" and feasibility given roof space, orientation and shading. Instructions for estimating this information, using Google Earth, will be included for property managers that require assistance..
- Provide a cost analysis tool to include return on investment, internal rate of return, payback analysis and when to spend the last dollar on energy efficiency and the first dollar on PV
- Provide information on tenant conservation and energy management practices
- Provide information on collaborative programs in the region

**2. Through user log-in, collect contact information that will allow for:**

- Follow-up by program implementers of programs to which the tool matches projects so that programs encourage action and participation
- A survey (sampling) of tool users to determine attribution levels, tool effectiveness, and alternative actions taken.

3. In coordination with workforce development, conduct training to building owners, property and asset managers, HERS raters, and Energy Inspectors on:

- Navigational Tool features
- Collection of data inputs
- Account set-up and data upload
- Project tracking

**Deliverables:**

- Default Tables
- Link to Beta Version of Navigational Tool
- Link to Final Version of Navigational Tool
- Workshop presentation(s)

**Subtask 2.14M: Energy Management Guidelines**

**The Contractor shall:**

- Develop energy management guidelines that serve as a roadmap for building owners to achieve persistent energy savings through employing consistent and comprehensive energy management best practices. These guidelines will work from current best practices to help building owners to annually assess, evaluate, plan, and implement energy management. Using the above proposed navigational tool, EPA's benchmarking tool, operations and maintenance manuals and best practices, as well as tenant behavior campaigns, to help building owners know when to invest in improvements or complete maintenance and how this depends on critical points in the building lifecycle.

**Deliverables:**

- Energy Management Guidelines

**Subtask 2.15M: Tenant Energy Conservation Education**

Tenant behavior plays a large role in building energy use, regardless of a building's efficiency. Shifting behaviors can reduce energy use by 5% (as documented by previous SEI studies).

**The Contractor shall:**

- Leverage existing education and campaign efforts to provide energy education to tenants through building owners. SEI has in place a range of options for delivering education and campaigns related to energy and water conservation. These programs teach residents about energy efficiency and water conservation by providing technical support and training to housing staff and residents. The overarching goal is to inspire residents to become active stewards of their environment. SEI will also provide technical support related to developing ongoing sustainability plans for individual properties.

**Deliverables:**

- Tenant Education Strategy
- Leveraging Education and Campaigns (draft and final)

**Subtask 2.16M: Building Owner Incentives****The Contractor shall:**

- Collaborate with regional, state-wide and national programs through which participants can leverage funds for participation in the MF whole-building program, and educate participants on the availability of these incentives.
- Work with local jurisdictions (cities) in an effort to bring incentives directly through the program to participating projects.

**Deliverables:**

- List of leveraged programs
- Report ongoing collaboration in monthly reports

**Subtask 2.17M: HERS Rater, Inspector, and Analyst Incentives**

Provide an incentive to HERS Raters, Inspectors, and Analysts to offset the cost of performing energy audits and analysis, upon completion of retrofits recommended in the energy audits. Incentives will be paid directly to the HERS Rater or Home Performance Contractor. Contractors who receive incentives will be required to report information on their projects including site address, measures installed and energy savings prior to receiving reimbursement. Contractor will also work with the local government programs that offer to offset or completely pay for the cost of audits to ensure that program participants are aware of the incentives available to them through these programs.

**The Contractor shall:**

- Develop an application for incentives for HERS Raters, Inspectors, and Analysts for conducting audit, analysis, and verification for participating projects.
- Reserve incentives for HERS Raters, Inspectors, and Analysts whose applications accompany an accepted building owner application.
- Distribute incentives to HERS Raters, Inspectors, and Analysts upon retrofit completion and verification of installation.
- Track all reserved and pending incentives in HMG's database.

**Deliverables:**

- HERS Rater/Inspector/Analyst Application (draft and final)
- Report of reserved and issued HERS Rater, Inspector, and Analyst Incentives in monthly report.

**Subtask 2.18M Verification of Energy Savings**

Verification of energy savings will be accomplished through the HERS II building simulation tool developed in Subtask 2.7M. Energy savings will be tracked for multi-family buildings that have participated in the program. The program will cooperate with and facilitate DOE and/or Energy Commission audits and EM&V studies.

**The Contractor shall:**

- Use the web-based tracking and reporting system developed in Subtask 2.9M to capture participant address and contact information, building square footage, retrofit measures installed, retrofit costs, funding provided by the program, HERS II post energy and carbon savings data and actual utility-use information.
- Track energy savings from all projects that have participated in the program.
- Provide monthly reports of energy saving and reports of DOE/Energy Commission audits and/or EM&V activity.

**Deliverables:**

- Access to beta and final versions of web-based tracking and reporting system
- Monthly reports of program energy savings and reports of DOE/Energy Commission audits and/or EM&V activity

## **Task 2S<sup>2</sup> Program Delivery - SINGLE FAMILY PROGRAM**

The single family program will be led by CCSE and a team of subcontractors and partners who will work together to ensure program success. The overall goal of this program is to cultivate a sustainable market for energy efficiency retrofits in single family homes. To achieve this goal, the program will help create a properly trained workforce to perform residential retrofits, educate homeowners about the availability of programs designed to offset some of the costs to retrofit their homes and develop tools and best practices that could be applied to future residential retrofit programs or energy efficiency strategies. This program focuses primarily on marketing; education and outreach that will help bring together all the retrofit resources available in the region and provide this information in a way that is clear and actionable to the homeowner and those seeking work or workers in the retrofit industry.

### **Subtask 2.1S Program Implementation Plan (PIP)**

The goal of this subtask is to develop a Program Implementation Plan (PIP) that clearly outlines goals, objectives and activities. The PIP will provide detailed activities, milestones, timeframes and roles and responsibilities for each subcontractor and partner in program delivery, reporting and EM&V for each program component. The PIP will also contain contingency plans for the critical components of the program. Finally, the PIP will provide the Energy Commission an opportunity to review and approve all significant documents and agreements prepared and executed by the Contractor in carrying out the PIP.

#### **The Contractor shall:**

Develop a Program Implementation Plan (PIP) that details each program component for single family buildings. The PIP will provide a roadmap to develop and implement the following, for the single-family market:

- Identification of Goals, Objectives and Activities – Identify specific activities, goals and objectives for each program component.
- Policies and Procedures –
  - Develop Internal policies and procedures for developing and delivering program services, applications for receiving training and audit incentives, working with customers;
  - Develop External policies and procedures for building performance contractors, and HERS raters, inspectors, and analysts.
  - Develop policies and procedures for compliance with National Historic Preservation Act and Waste Management Plan Framework requirements.
- Marketing Plan – Identify target markets, design customer enrollment and develop marketing strategies for Tiers I, II & III; describe participation in Energy Upgrade California; explain how marketing plan relates to recent large-scale marketing study; draft MOUs with all partners working to accomplish marketing, education, outreach and participant recruitment

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<sup>2</sup> Subtasks under Task 2 are shown as either “S” referring to the Single Family Program or “M” referring to the Multi-Family Program.



- Collaboration Plan – Describe proposed collaboration efforts with national, state and utility programs, including HERS II, Home Performance with Energy Star (HPwES), the Building Performance Institute (BPI), SDG&E's Whole House Program, affordable housing financing programs, such as the Neighborhood Stabilization Program, Energy Efficient Mortgages and the FHA 203K loan program, and local administrators of multiple listing services in the region, and develop MOUs with all partners that will be involved in this collaboration
- Technical Assistance – Design strategies for optimizing homeowner energy savings. This technical assistance will be offered jointly between the program and the San Diego Energy Resource Center, which currently provides free technical support that will be made available to residential buildings owners. Develop a sample Scope of Work for Home Performance Contractors and provide it in the PIP.
- HERS Rater and Home Performance Contractor Incentives – Develop the process for paying out incentives for HERS Raters or Home Performance Contractors that will be available when recommended energy efficiency improvements are installed.
- Leverage Funds –Develop and maintain list of leverage funds that will directly contribute to the success of the program
- Workforce Development Plan – Develop the training and support for the workforce to deploy Tiers II & III, develop MOUs with all partners in the program working to accomplish workforce development, including Manpower, local Workforce Investment Boards, Community Colleges, Green Jobs Training programs and independent training providers (such as CBPCA and HERS II providers). Coordinate with San Diego Green Workforce Coalition
- Program Training – Develop non workforce development training, to be provided by CCSE for Homeowners, Contractors, and Auditors on program guidelines and participation
- Quality Assurance – Develop a regional approach to quality assurance to be used by regional retrofit programs, including SDG&E's Whole House program and local PACE programs;
- Tracking – Develop participant data and tracking procedures to identify projects impacted by the program and determine the corresponding savings;
- Verification of Energy Savings – Design method of verification of energy savings based on HERS II energy audits for the purpose of reporting to DOE; facilitate DOE/Energy Commission program audits and EM&V
- Ongoing Energy Savings – Develop energy management guidelines and homeowner/tenant conservation training and information
- Contingency Plans- Develop contingency plans to lower the risk that critical program components are not accomplished. The fundamental risk is that the funding awarded for this program will not be expended and will have to be returned to the federal government for failure to design and develop marketing, education and outreach materials, develop the tracking and navigational tools, and develop and support the retrofit workforce that are the objective of the program. To mitigate this fundamental risk, a monthly deployment schedule of all activities that contribute to successful completion of the tasks in this contract shall be developed, and the Contractor shall actively monitor progress against this deployment schedule, identify problems with progress and corrective actions that can be taken to address those

problems and keep the Contract Manager actively informed, so that Critical Program Review meetings can be called as necessary.

**Deliverables:**

- Program Implementation Plan
- Marketing Plan, including MOUs signed by all partners working on marketing
- Coordination Plan, including MOUs signed by all partners involved in collaboration
- Workforce Development Plan, including MOUs signed by all partners working on workforce development
- Risk Assessment and Contingency Plans

**Subtask 2.2S Tracking System**

**The Contractor shall:**

Create a system that tracks participant data and can be used for reporting, tracking and research. The collaborative has already developed a database specific to multifamily programs and we will build on this existing database to develop a customized tracking system for the single-family program. The following information will be tracked on a continuous basis:

- Project –Information for projects resulting from the marketing, education and outreach and technical assistance provided by this program. Information will include owner contact information, site contact, building area, energy savings, existing conditions, measures/equipment upgrades, HERS Rater/Home Performance Contractor/HERS Analyst contact information, HERS inspection dates
- Training – All training participants
- Incentives – Incentive payments to HERS Raters and Home Performance Contractors

**Deliverables:**

- Tracking database output
- Monthly reporting on data tracked

**Subtask 2.3S Marketing, Education and Outreach: Participant Recruitment**

The contractor will coordinate its marketing, education and outreach strategically and cooperatively to recruit 1000 participants and influence building owners to make appropriate energy-efficiency and retrofit improvements to their properties and increase their energy conservation behaviors in a tiered approach.

**The Contractor shall:**

1. Lead the marketing efforts for single-family retrofits, providing a centralized online information resource, unified marketing materials and tools for use by all partners consistent with the marketing plan. Develop a set of comprehensive marketing materials to distribute at community events, conferences, meetings and other venues (detailed in the PIP). These materials may include but not be limited to: a program application, program brochure, exhibit panel (to outline program and recruit

participants), direct marketing (email blasts), PowerPoint Presentations, Ads in Conference Programs, print ads, radio ads, web site, direct mail, targeting homes built before Title 24 requirements using GIS data.

The following activities will be conducted:

- Door-to-door outreach, booths at community events staffed by trained volunteers from CCSE, outreach cooperation with community organizations to distribute Tier I materials and provide information about Tiers II and III
- Coordination with big box retailers , including but not limited to Home Depot and Lowes
- Collaboration with local governments to promote the program via city websites, television stations and local government events
- Homeowner workshops to educate them about the program. Leverage existing education and campaign efforts to provide education to homeowners
- Collaboration with the San Diego Energy Resource Center, a joint partnership between collaborative partners SDG&E and CCSE, which provides free energy efficiency-related workshops, a diagnostic tool and book lending library, technology displays, training rooms and free technical support to support program activities. The Residential Building Retrofit Program will build on the existing infrastructure of the ERC to specifically target the Home Performance Contracting industry through customized workshops, technical assistance and targeted outreach.
- Targeted information to local residents who have previously attended energy-efficiency related workshops at the San Diego Energy Resource Center.
- Ads in local newspapers, magazines or print publications, radio ads, direct marketing (email and mail)
- Cross-promotion with other third-party and utility programs
- Matrix of programs available to homeowners in the region that will help finance residential retrofits. Information will be provided online and marketing collateral will be developed promoting these programs, which is jointly endorsed by local governments, program administrators, and California Energy Commission
- Targeted mailing to housing units built before Title 24 requirements

2. Provide training for contractors to educate them on the program itself and available rebates. Residential building owners who install Tier II measures will be encouraged to move into Tier III (Tier II will be considered a transition phase while the market prepares for HERS II approval and HERS raters to be trained). Contractors will be provided training on what the program will require to demonstrate conformance with state law under both Tiers II and III. Design and conduct a special series of workshops to explain HERS providers' and raters' opportunity to participate in the program, focusing on the importance of "House as a System" principles, well-documented testing and paperwork submission to the program. To encourage contractor participation and deliver Tier II and III services, we will provide contractor workshops, and develop and use a GIS-based parcel analysis tool to help contractors target likely areas for doing work, and present or exhibit at industry conferences, place ads or write articles in programs at industry conferences or in industry publications. Contractors will be made aware of the efforts

conducted by the program to market to homeowners and convey the benefits of using participating contractors to achieve retrofits. Marketing efforts will include targeted mailings to housing units built before Title 24 requirements, coordination with marketing efforts of community groups and homeowner workshops on the value of the whole-house approach and the availability of municipal financing, energy efficient mortgages, 203K loans, and cost saving incentives.

**Deliverables:**

- Marketing Plan
- Schedule and Status Reports of Homeowner Workshops
- Schedule and Status Reports of Volunteer Trainings
- Schedule and Status Reports of Home Performance Contractor Trainings
- Schedule and Status Reports of HERS Rater Trainings
- HERS Rater and Home Performance Contractor Incentive Application
- Program Brochure
- Website Design (Energy Commission to review during development)
- Other Marketing Materials (no draft)
- Recruit 1000 single family homes

**Subtask 2.4S Quality Assurance**

The contractor will develop a high level of quality assurance procedures (to be detailed in the Program Implementation Plan) to be used by regional residential retrofit programs, including but not limited to SDG&E's Whole House Program and local PACE programs, to ensure and demonstrate energy savings, the quality of energy audits, installed measure verification and diagnostics, contractor qualifications (BPI certified), cost-effectiveness, assure that approaches are coordinated with EPA/DOE Home Performance with Energy Star program, safeguard the reputation of the program, and determine a sampling rate for contractor's work. The contractor will work with local program administrators to encourage all programs in the San Diego County region to use consistent standards for quality assurance activities and to conduct these activities in a coordinated way so as not to inconvenience homeowners. The contractor will develop and disseminate standardized scopes of work to encourage contractor recognition and support for the expectation for quality installations within home performance programs throughout the region.

**The Contractor shall:**

- Develop language to ensure that quality installation clauses are incorporated into contracts for projects supported by regional residential retrofit programs. The clauses would require contractors to install equipment or perform work according to manufacturer instructions, Title 24 standards and best practice. Contractors will be informed that their installation/construction will be verified by a HERS rater, and if there are any quality issues, they will be held responsible. Contractors would be required to redo work or replace equipment. In addition, if there are multiple occurrences of contractor misconduct, the contractor may be barred from participation in these regional residential retrofit programs.

- Technical Assistance: Develop sample scopes of work for Home Performance Contractors. Scopes of work will be developed for a range of program approaches and specific measures. Review contractor scopes of work and provide feedback through e-mail, phone or in-person meetings.
- Provide technical design support upon request to improve the energy performance of a home. This support will be coordinated with additional technical assistance provided by the San Diego Energy Resource Center.
- Create and maintain an up-to-date list of contractors who have been trained through the Building Performance Institute (BPI), Home Performance with Energy Star or other regional training offered through ARRA. The contractor list will be clearly marked and searchable by homeowners on the program website.
- Develop a participant evaluation process, whereby participants in regional residential retrofit programs can rate program and contractor services through a survey and provide feedback on program improvements. The collaborative will respond promptly to issues and will work with regional residential retrofit program administrators to implement feasible program improvement suggestions.
- Keep diligent records and electronic and paper files for each participating project, including all building simulation files, signed program documents and agreements, as well as communication between the participants and collaborative staff.

**Deliverables:**

- Quality Assurance Procedures
- Installation Clauses/Language
- List of Certified Contractors
- Participant Evaluation Survey (draft, and as requested by Energy Commission contract manager)

**Subtask 2.5S Conformance with California Law**

**The Contractor shall:**

- Work to ensure that regional residential retrofit programs and participant activities are in conformance with California law, including compliance with Title 24 measure and field verification requirements for alterations to existing buildings, demonstration that building permits have been pulled for all retrofit installations, and demonstration that all contractors are licensed and in good standing with the Contractors State License Board and are doing work that is legally within the scope of their licensure.
- Design and conduct a special series of workshops to explain HERS providers' and raters' opportunity to participate in the program, focusing on the importance of "House as a System" principles, well-documented testing and paperwork submission to the program

- Design and conduct a series of workshops for Home Performance Contractors that explains the opportunity to participate in regional residential retrofit programs, focusing on the importance of “House as a System” principles, pulling and submitting applicable permits, and ensuring energy improvements are installed in conformance with California law and according to best practices.
- Work with applicable regional partners to ensure that through energy audits and review of scopes of work, Title 24 measure and field verification requirements for alterations will be met.

**Deliverables:**

- Contractual Scope of Work Template
- Workshops for HERS Providers and Raters
- Workshops for Home Performance Contractors

**Subtask 2.6S Collaboration with State and National Programs**

**The Contractor shall:**

Collaborate with State and National Programs as provided in the Collaboration Plan, including but not limited to HERS Phase II, Home Performance with Energy Star, Building Performance Institute, affordable housing financing programs, such as the Neighborhood Stabilization Program, Energy Efficiency Mortgages, and the FHA 203K loan program and SDG&E’s Whole-House Program.

**Deliverables:**

- Report ongoing collaboration in monthly reports

**Subtask 2.7S Workforce Development**

Implementation of this program will create a variety of jobs in sales and construction for specialty contractors, HERS raters, building performance contractors, energy consultants, building analysts, and many related areas.

**The Contractor shall:**

Consistent with the Marketing Plan and MOUs, work with workforce development and training programs in the region, including Community Colleges, Green Jobs Training programs and independent training providers (such as CBPCA and HERS II providers) to conduct a needs assessment, and create educational and career opportunities that are directly related to successful achievement of the program. This will be accomplished in conjunction with the program subcontractors which include California Building Performance Contractors Association (CBPCA) and Manpower. CBPCA will provide Home Performance with Energy Star & BPI Certified Building Analyst and Envelope Training. In addition, CBPCA will develop a Residential Energy Building Performance Professional training that will build on the skills of existing HERS providers and Building Analyst professionals to lead and coordinate Tier II and III activities.

CCSE will also coordinate with CalCERTs and CHEERS to conduct HERS II trainings at our Energy Resource Center. Manpower will provide subsidized on-the-job training and internship programs for graduates of green training programs at local community colleges and graduates of CBPCA, CalCERTS and CHEERS training programs. Given that many of these graduates will end up running their own small business, Manpower will provide entrepreneurial skills and classes that will enable them to be successful. CCSE will actively collaborate with all the training providers to ensure that the training they provide meets the needs of this program.

**Deliverables:**

- Conduct CBPCA Trainings (report progress and attendance in monthly reports)
- Conduct Manpower Internship Program (provide update in monthly report)
- Conduct Manpower On-the-job Training Program (provide update in monthly report)
- Reporting of Ongoing Coordination with workforce development and training providers (ongoing)

**Subtask 2.8S Navigational Tool**

**The Contractor shall:**

Develop a navigational tool that will match homeowners with the single family initiatives provided by the program, contractor and HERS rater services, and teach them about behavior-related energy saving strategies and available incentives. The tool will encourage homeowners to apply to the program for assistance and make energy efficiency improvements to their homes, and will provide information about measures that will provide energy, comfort and other benefits, and explain measure installation feasibility and potential cost effectiveness.

**Deliverables:**

- Default Tables (backend information)
- Link to or DVD of Beta Version of Navigational Tool
- Link to or DVD of Final Version of Navigational Tool

**Subtask 2.9S Building Owner Incentives**

**The Contractor shall:**

- Collaborate with local, regional, statewide and national programs through which participants can leverage funds for participation in the single family whole-building program, and educate participants on the availability of these incentives.
- Work with local jurisdictions (cities and County) in an effort to bring available incentives to participating projects. Develop an efficient program structure for accomplishing this where applicable.

**Deliverables:**

- List of leveraged programs
- Report ongoing collaboration in monthly reports

**Subtask 2.10 PACE Financing Programs****The Contractor shall:**

Work with local PACE program providers to ensure program participants are aware of the financing opportunities available to them through these programs, and coordinate technical assistance and quality assurance with those programs.

**Deliverables:**

- Report ongoing collaboration in monthly reports

**Subtask 2.11S HERS Rater and Home Performance Contractor Incentives**

Provide an incentive to HERS Raters and Home Performance Contractors to offset the cost of performing energy audits, when the energy efficiency improvements recommended in the energy audits are installed. Incentives will be paid directly to the HERS Rater or Home Performance Contractor. Raters and Contractors will be required to report information on their projects including site address, measures installed and energy savings prior to receiving reimbursement. Raters and Contractors will also work with the local government programs that offer to offset or completely pay for the cost of audits. This will ensure that program participants are aware of the incentives available to them through these programs. This will also ensure that contractors do not receive audit incentives from local government programs and the Residential Retrofit Program for the same audit and will ensure that the total incentives provided to the HERS Raters and Home Performance Contractors do not exceed the total value of the audit services.

**The Contractor shall:**

- Develop an application for incentives for HERS Raters and Home Performance Contractors conducting audit, analysis, and verification for participating projects.
- Reserve incentives for HERS Raters and Home Performance Contractors whose applications accompany an accepted building owner application.
- Distribute incentives to HERS Raters and Home Performance Contractors upon retrofit completion and verification of installation.
- Track all reserved and pending incentives

**Deliverables:**

- HERS Rater and Home Performance Contractor Application
- Report of reserved and issued HERS Rater and Home Performance Contractor Incentives in monthly report.

**Deliverables:**

- Monthly report on incentives paid out to contractors
- Report ongoing collaboration in monthly reports



### **Subtask 2.12S Verification of Energy Savings**

Verification of energy savings will be accomplished through the HERS II building simulation tool that will be used to determine existing single-family building conditions in relation to 2008 Title 24 building standards and Net Zero. Energy savings will be tracked for homes where the contractor has received incentives for training or the homeowner has received technical assistance through the program.

#### **The Contractor shall:**

- Develop an online web-based tracking and reporting system to capture, participant address and contact information, building square footage, retrofit measures installed, retrofit costs, funding provided by the program, HERS II post energy and carbon savings data and actual utility-use information.
- Track energy savings from projects where the HERS Rater or Home Performance Contractor has received an incentive.
- Track energy savings from projects where the HERS Rater or Home Performance Contractor has received training through the program.
- Coordinate with SDG&E's Whole House Program, local PACE financing programs and other program administrators to identify participants in their program resulting from the regional program's marketing, education and outreach, and technical assistance activities.
- Provide monthly reports of energy saving and reports of DOE/Energy Commission audits and/or EM&V activity.

#### **Deliverables:**

- Access to beta and final versions of Web-based tracking and reporting system
- Status report on collaboration with utility Whole House Program and local PACE programs
- Monthly reports of program energy savings and reports of DOE/Energy Commission audits and/or EM&V activity